REMARKS

I. Introduction

This is response to the Office Action dated September 28, 2006.

By the above amendments, applicants have:

(1) added a cross-reference to their International Application No. PCT/AU2003/001116;

(2) corrected an error in their specification relating to the description of Figure 6; and

(3) amended Claims 1, 3, 5, 7, 9, 11, 17, and 18 to better define their invention.

With regard to item (2), in their priority application, i.e., Australian Application No. 2002951096, terminals 2 and 4 of Figure 6 were shown as belonging to one coil and terminals 1 and 3 as belonging to another coil. In preparing the PCT application, Figure 6 was revised so that terminals 1 and 2 belong to one coil and terminals 3 and 4 belong to the other. However, the text of the PCT application that discussed these terminals was inadvertently not changed to reflect the changes made to Figure 6. The above amendment to the paragraph which appears at page 7, lines 22-29, of the PCT specification corrects the description so that it now corresponds to what is shown in Figure 6.

With regard to item (3), the amendments to Claims 1, 5, 7, 11, and 18 also relate to Figure 6. As shown in that figure, the main conductors of applicants' claims need not be connected to a pair of connection conductors (as in Figure 3 and 4), but can be connected at one end by a connection conductor (see, for example, the top connections of Figure 6) and connected at the other end to, for example, a preamplifier of a receiver or to a transmitter (see, for example, the bottom connections of Figure 6). The amendments to independent Claims 1 and 7 have been made to avoid any question that these claims cover embodiments of the type shown in Figure 6. Claim 18 has been similarly amended, and changes have been made to dependent Claims 5 and 11 to

reflect the changes made to the independent claims from which these claims ultimately depend.

Amendments have also been made to Claims 3, 9, and 17. In dependent Claims 3 and 9, the last phrase in the claim has been deleted since the claims from which these claims depend, i.e., Claims 2 and 8, respectively, already contain the concepts of a cylindrical space and diametric opposition. As to independent Claim 17, that claim has been amended to specify that the coil array contains a plurality of "electrically" separate coils. Support for this amendment can be found in, for example, independent Claim 1 which calls for "coil elements...electrically separate from each other."

The above amendments do not introduce new matter into this application and thus their entry is respectfully requested.

II. Objections to Drawings and Specification

In paragraph 2 of the September 28th Office Action, the Examiner objected to applicants' drawings because allegedly "component S11 taught on page 8 in lines 29 and 31 of the original disclosure is not present in Figures 9A to 9D" (9/28/06 Office Action at page 2). In addition, in paragraph 3, the Examiner objected to the specification on the same grounds.

Submitted herewith is copy of a Wikipedia article which discusses "S-parameters." As indicated therein, S-parameters, including the parameter "S11", are used to describe the properties of, among other things, radiofrequency (RF) systems. The portion of applicants' specification referred to by the Examiner states that "[t]he S11 curves on the right of the respective figures [i.e., Figures 9A to 9D] indicate that the elements are very well isolated and unaffected by the proximity of the other tuned elements." Thus, applicants are using the designation "S11" to refer to the actual curves in Figures 9A to 9D, not to a component of applicants' coil array. Accordingly, applicants respectfully submit that neither their drawings nor their specification need to be amended.

III. §102 Rejections

In addition to the objection to the drawings, the Examiner also rejected applicants' Claims 1-18 under 35 USC §102(e) based on Visser et al., U.S. Patent No. 6,870,368, or Visser et al., U.S. Patent Application Publication No. US 2002/0125888, which is the prior publication of the Visser et al. patent (hereinafter referred to collectively as "Visser et al."). Applicants respectfully traverse this rejection.

The following are copies of applicants' independent Claims 1, 7, and 17, wherein bolding and double underlining has been used to indicate a portion of the claim not disclosed in Visser et al.:

Independent Claim 1 (as amended)

> 1. A radio frequency (RF) coil array for use in resonance imaging and/or analysis of a subject located within a space in which a magnetic field is operatively applied in a first direction, the coil array comprising a plurality of coil elements angled relative to each other and electrically separate from each other, **each coil element having a pair of main conductors extending generally parallel to the direction of the magnetic field and located on opposite sides of the space**, and a connection conductor connected between respective ends of the main conductors.

Independent Claim 7 (as amended)

> 7. Resonance imaging apparatus comprising
>
> a space for receiving a subject to be imaged,
>
> magnet means for applying a magnetic field to the space in a first direction, and
>
> a radio frequency (RF) coil array comprising a plurality of angularly spaced coil elements, **each coil element having a pair of main conductors extending generally parallel to the direction of the magnetic field and located on opposite sides of the space**, and a connection conductor connected between respective ends of the main conductors.

Independent Claim 17 (as amended)

17. A rotary switched RF coil array arrangement for combined parallel imaging of a subject located in a cylindrical space, the coil array arrangement comprising

a plurality of electrically separate coils spaced angularly about the axis of the cylindrical space, **each coil including a pair of main conductors extending axially on diametrically opposite sides of the cylindrical space**,

a receiver channel, and

switching means for selectively connecting the receiver channel sequentially to the coils.

As explained in applicants' specification, by using coil elements (coils) having main conductors on opposite sides of the space in which the subject is located the region of maximum sensitivity of the coil element is central rather than peripheral to the anatomy under study, e.g., a subject's head. Such central maximum sensitivity is often preferable in a diagnostic sense. See, for example, page 2, lines 21-27, and page 5, lines 26-32, of applicants' specification.

The following are annotated copies of Figures 6 and 8 of applicants' specification showing representative examples of electrically separate coil elements (electrically separate coils) which can be used in the practice of these embodiments, as well as the "pair[s] of main conductors...located on opposite sides of the [subject] space" called for by independent Claims 1, 7, and 17 for these embodiments. Specifically, Figure 6 has two coil elements (two coils) and thus has been labeled to show the pair of main conductors of coil 1 and those of coil 2, while Figure 8 has four coil elements (four coils) and thus has been labeled to show the four pairs of main conductors of the four coils.

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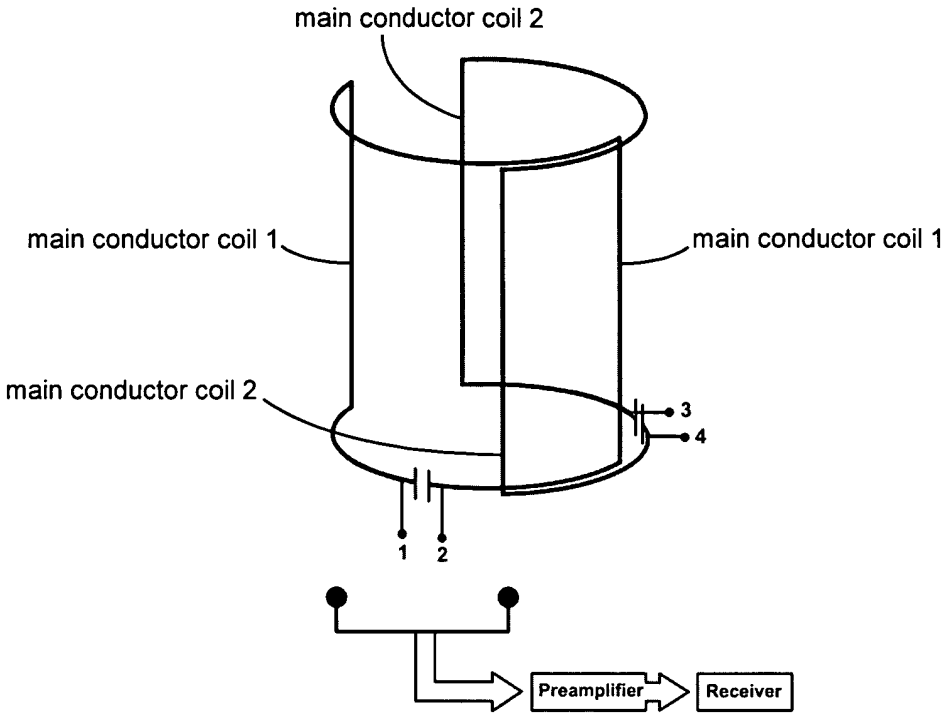

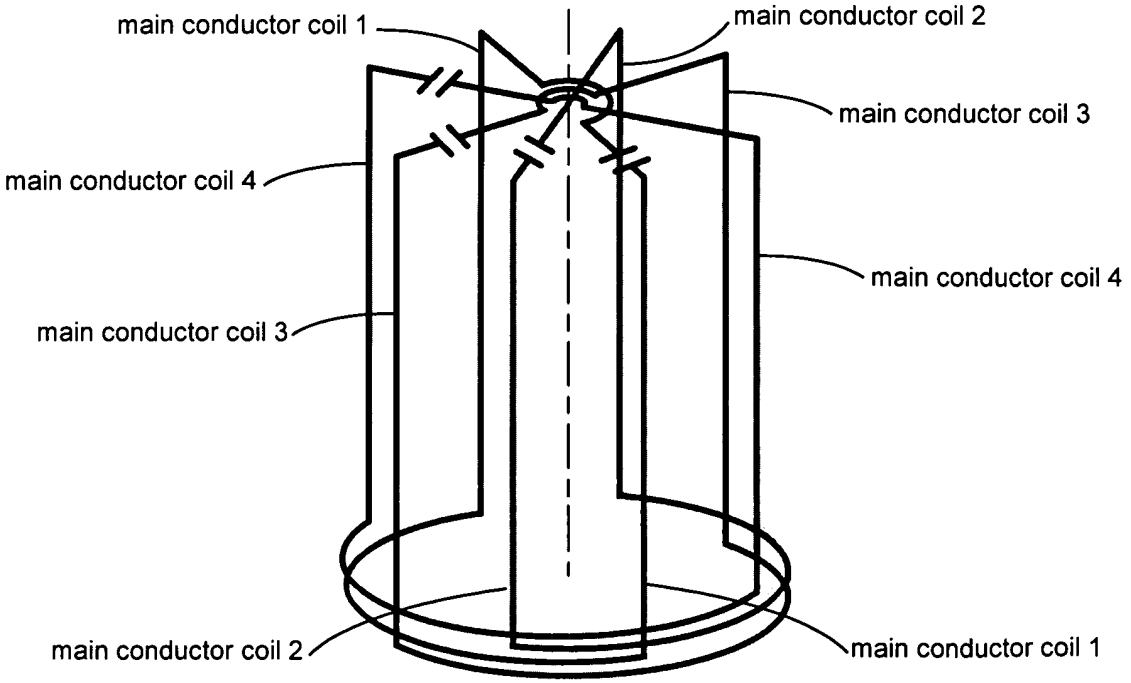

In addition to the above drawings, the following are copies of applicants' Figure 5 and Figure 4 of Visser et al. where the coil elements of Claims 1 and 7 (coils of Claim 17) have been identified:

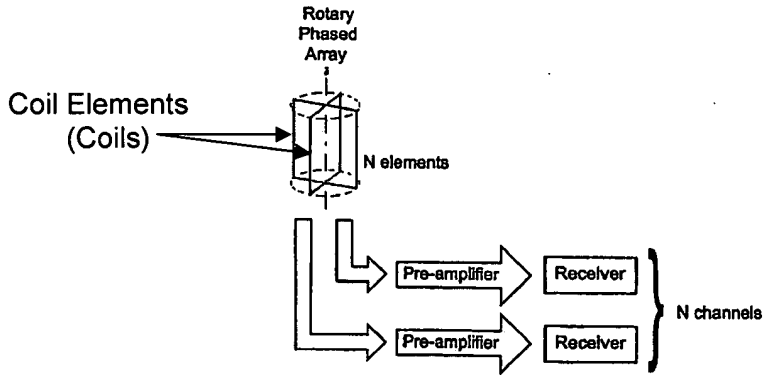

Figure 5 of Present Application

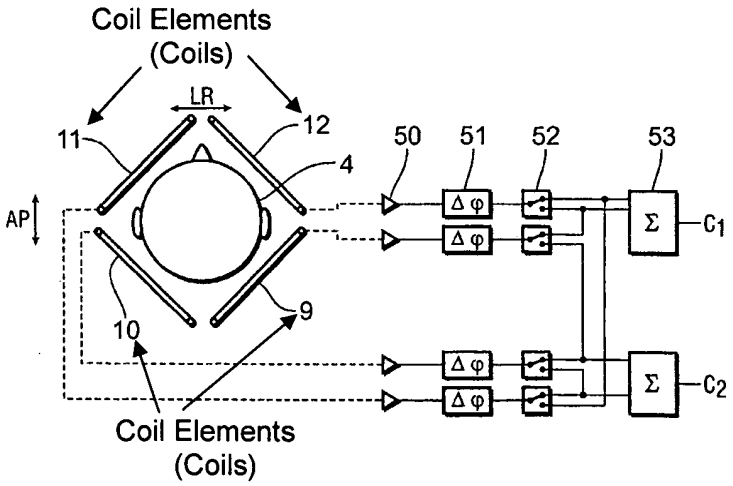

Figure 4 of Visser et al.

As clearly shown by the above figures, each of the coil elements (coils) of the present invention has a pair of main conductors on opposite sides of the space in which the subject is located whereas in Visser et al. the main conductors for each of the coil

elements (each of the coils) are on the same side of the space. Accordingly, Visser et al. does not anticipate applicants' claims.

Applicants would also like to comment on the Examiner's identification of the dashed lines of various of Visser et al.'s figures as the "connection conductors connected between respective ends of the main conductors" of applicants' Claims 1 and 7. These dashed lines are not part of Visser et al.'s coil elements but rather represent the connection of Visser et al.'s coil elements to Visser et al.'s preamplifiers 50. They correspond to the large arrows of applicants' Figure 5 reproduced above.

There are further distinctions between applicants' claims and Visser et al. but a detailed discussion of those differences is not considered necessary in view of the differences between the coil elements (coils) called for by applicants' claims and those disclosed in Visser et al.

The foregoing comments are believed to address all of the issues raised by the Examiner. Accordingly, reconsideration and the issuance of a Notice of Allowance for this application are respectfully requested.

Respectfully submitted,

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